

CLAIMS

1. A method of accurately positioning an anchor bolt to a foundation by a swing-type anchor bolt comprising the steps of:

fixedly installing anchor bolt mounting means on leveling concrete so as to be aligned with a center mark for the anchor bolt positioned and indicated thereon;

mounting the anchor bolt to the anchor bolt mounting means so that an axial center is aligned with the center mark in a state of extending in the vertical state via a hinge member which can be bend in any directions through 360°;

casting concrete for a base portion and a rising portion of the foundation simultaneously; and

adjusting the anchor bolt that may have inclined at the time of casting to the vertical state before the concrete is hardened, and maintaining the vertical state by holding means.

2. A method of accurately positioning an anchor bolt to a foundation by a swing-type anchor bolt comprising the steps of:

fixedly installing anchor bolt mounting means on leveling concrete so as to be aligned with a center mark of an outer periphery of a mat foundation for the anchor bolt

positioned and indicated thereon;

mounting the anchor bolt to the anchor bolt mounting means so that an axial center is aligned with the center mark in a state of extending in the vertical state via a hinge member which can be bent in any directions through 360°;

casting concrete for a base portion;

adjusting the anchor bolt that may have inclined at the time of casing to the vertical state before the concrete is hardened, and maintaining the vertical state thereof until the concrete is hardened by holding means; and

removing the holding means and casting concrete for a rising portion.

3. A method of accurately positioning an anchor bolt to a foundation by a swing-type anchor bolt comprising the steps of:

fixedly installing anchor bolt mounting means on leveling concrete so as to be aligned with a center mark for the anchor bolt positioned and indicated thereon;

casting concrete for a base portion of the foundation to a level of a midpoint of an extension shaft extending upright from an immediately above the center mark, the extension shaft extending from the anchor bolt mounting means;

mounting an anchor bolt to an upper end of the

extension shaft of the anchor bolt mounting means so that an axial center and an axial center are aligned with each other in a state of extending in a vertical state via a hinge member which can be bent in directions any through 360°;

casting concrete for a rising portion of the foundation; and

adjusting the anchor bolt which may have inclined at the time of casting to the vertical state before the concrete is hardened, and maintaining the vertical state by holding means.

4. A method of accurately positioning an anchor bolt to a foundation by a swing-type anchor bolt comprising the steps of:

mounting unit mounting means for an anchor bolt unit on leveling concrete so that an axial center of a reference center shaft of the anchor bolt unit connected in a positional relation which is to be achieved when the plurality of anchor bolts are mounted to the foundation is aligned vertically with a center mark for the reference center shaft of the anchor bolt unit positioned and indicated thereon when the reference center shaft is disposed upright in a vertical state;

mounting the anchor bolt unit to the unit mounting means so that the axial center is aligned with the center mark in a state in which the reference center shaft is

extended upright in the vertical state via a hinge member which can be bent in any directions through 360°;

casting concrete for a base portion and a rising portion of the foundation simultaneously; and

adjusting the reference center shaft to the vertical state to adjust the anchor bolt unit that may have inclined at the time of casting to a vertical state before the concrete is hardened, and maintaining the vertical state by holding means.

5. The method of accurately positioning an anchor bolt to a foundation by a swing-type anchor bolt according to Claim 1, 2, 3, or 4, wherein the center mark is positioned and indicated on the leveling concrete in reference to directly a reference center of a building.

6. The method of accurately positioning an anchor bolt to a foundation by a swing-type anchor bolt to a foundation by a swing-type anchor bolt according to Claim 1, 2, 3 or 4, wherein a height adjusting member is interposed immediately above or immediately below the hinge member.

7. The method of accurately positioning an anchor bolt to a foundation by a swing-type anchor bolt according to Claim 4, wherein the reference center shaft is formed of a shaft body constituting an outer layer and a core member of a small diameter constituting an axial center thereof and is adapted to be cut at any position in a longitudinal

direction.

8. The method of accurately positioning an anchor bolt to a foundation by a swing-type anchor bolt according to Claim 1, 2, 3, 4, 5, 6, or 7 comprising the steps of: indicating a reference center line of the foundation on the leveling concrete in reference to the reference center of the building, fabricating a center mark indication tape which indicates a reference center line to be aligned with the reference center line and the center mark for the anchor bolt or the center mark for the reference center shaft which has a predetermined positional relation therewith in advance; and adhering the center mark indication tape on the leveling concrete so as to align the center mark indication tape with the reference center line, thereby indicating the respective center marks.

9. The method of accurately positioning an anchor bolt to a foundation by a swing-type anchor bolt according to Claim 1, 2, or 3, wherein the hinge member is formed of a flexible tube member having insertion joint ends at both ends.

10. The method of accurately positioning an anchor bolt to a foundation by a swing-type anchor bolt according to Claim 4, wherein the hinge member is formed of resilient material having joint ends at both ends.

11. the method of accurately positioning an anchor bolt to a foundation by a swing-type anchor bolt according to

Claim 6, wherein the height adjusting member is a turn buckle type height adjusting member including an adjusting member body for adjusting the length by being rotated and screw members having thread in the opposite direction from each other screwed into the adjusting member body from both ends or a piston type height adjusting member including a cylindrical adjusting member body, two piston members inserted from both ends thereof so as to be capable of back and forth movement, rod members connected to the piston member so as to project from both ends of the cylindrical adjusting member body, two or more fixing screws screwed on a peripheral side of the cylindrical adjusting member body, the two or more fixing screws being screwed to peripherals side of the piston members for fixing the position thereof.

12. the method of accurately positioning an anchor bolt to a foundation by a swing-type anchor bolt according to Claim 1, 2, 3, or 4, wherein a plummet instrument for measuring the verticality of the anchor bolt or the reference center shaft of the anchor bolt unit is used for adjusting the anchor bolt or the anchor bolt unit to the vertical state, and the plummet instrument includes a pipe member for fitting on the anchor bolt or the reference center shaft and a verticality measuring section provided on an upper end thereof.

13. The method of accurately positioning an anchor bolt

to a foundation by a swing-type anchor bolt according to Claim 12, at least an upper portion of the anchor bolt which is fitted into the pipe member of the plummet instrument is corrected to be a circle having a center on an axial center in plan view before use so as to be fitted on the pipe member smoothly without being decentered and without looseness.

14. The method of accurately positioning an anchor bolt to a foundation by a swing-type anchor bolt according to Claim 2, wherein the holding means including two band-shaped holding strips connected so as to be capable of being bent at a midpoint thereof, an anchor holding hole opening at a bent center portion; and magnetized portions arranged at positions near both ends of the respective band-shaped holding strips is employed, the anchor bolt corrected to the vertical state is fitted in the anchor holding hole, and the two band-shaped holding strips are opened into a V-shape so that the magnetized portions at both ends can be fixedly attached to a concrete frame formed of magnetic metal.